



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7

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ORIGINATING SECTION: FACILITIES ENGINEERING
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AGENDA DATE: August 16, 2017

ITEM NO. 14f

SUBJECT: Capital Projects Status Report

The Facilities Engineering (FE) Section plans, performs and manages design and construction for the majority of the water supply conveyance, production, and delivery projects as well as the flood protection capital projects in the Zone 7 Capital Improvement Program (CIP).

Attached is a table showing the status of key capital projects for which the FE Section is responsible.

Facilities Engineering Project Status Report – August 16, 2017

Note: Bold text highlights schedule and project cost changes made from the previous quarterly report and explanation for changes.

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
Fund 120 Projects				
Asset Management Program (AMP) Update	The last AMP update was completed in 2011. In 2016 and 2017, the near term (10 year) asset renewal/replacement schedule and long term funding requirements will be updated.	Total Approved Budget- \$115,000 Spent = 60% Project Complete = 60%	Oct. 2017 (Board to consider for adoption of final plan)	An update of the long term AMP funding requirements is being performed in parallel with the 10-year CIP Update. Preliminary funding estimate has been prepared and is being reviewed internally. Planning to meet with Retailers in mid-August prior to meeting with Finance Committee.
Booster Pump Station – Rental	Procurement and installation of a rental booster pump station at Busch Valley site, if needed.	Total Estimated Cost = \$300,000 Total Approved Budget – \$300,000 Spent= 0%	Under emergency conditions, procurement and installation of rental pumps can be achieved in less than 30 days.	On hold. This project will proceed only if needed.
Chain of Lakes 1 and 2 Site Investigation and Utility Relocation	Ground movement towards Cope Lake has been observed at the COL 1 site. In September/October 2016, the Cope Lake slope at COL 1 was flattened out and riprap was installed at the toe of the slope for support. Additional site investigation is still needed to assess the extent of ground movement over the long term at COL 1 and now at COL 2, which is also starting to show movement. This project will also relocate COL 1 utilities threatened by ground movement.	Total Estimated Cost = \$330,000 Total Approved Budget – \$330,000 Spent= 29% Project Complete = 35%	Utility Relocation Work – August 2017 Finalize Site Investigation Report – September 2017	Soil borings and cone penetrometer tests were performed in February to assess subsurface conditions. Inclinometers were installed at each site to monitor ongoing changes in subsurface conditions. The final report from the investigation will include recommended actions to stabilize ground movement at the sites. Utility relocation work has been delayed due to Monterey Mechanical’s delay of procurement of materials for the project. Materials have been received as of the last week of July and work will begin in the beginning of August, lasting approximately 3 weeks.

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
DWWTP Polymer Mixing System Replacement	<p>The current polymer mixing system was retrofitted into a downstairs room near the filter gallery. It includes outdated mechanical/mixing equipment that requires manual polymer loading and mixing. The equipment often fails as well. Moreover, the room does not have adequate space for easy maintenance of the pumps and piping. This project replaces polymer mixing and mechanical equipment and provides more automated operation.</p>	<p>Total Estimated Cost = \$550,000</p> <p>Total Approved Budget - \$550,000</p> <p>Spent = 1%</p> <p>Project Complete = 1%</p>	<p>Planning – September 2017</p> <p>Design – October 2017</p> <p>Construction – May 2018</p> <p>Closeout - July, 2018</p>	<p>Zone 7 engineering and O&M staff are collaborating on polymer mixing equipment. Procurement schedules will then be investigated to determine critical path items and approach to ordering them. Design is expected to begin in September.</p>
DWWTP 3 MG Clearwell Roof Replacement and Rehabilitation Project	<p>Per AMP, the sheet metal roof, joists, and purlins are beyond their useful life and need to be replaced. As part of the project, leaky inlet and outlet valves are being replaced and the interior Hypalon liner is also scheduled for inspection and spot repairs. The new roof and interior liner will improve production reliability and lessen the threat of structural damage or more costly expense to repair the clearwell.</p>	<p>Total Estimated Cost = \$1.25 million</p> <p>Total Approved Budget – \$1.25 million</p> <p>Spent = 99%</p> <p>Project Complete = 100%</p>	<p>Design – August 2016</p> <p>Construction – April 2017</p> <p>Complete</p> <p>Closeout – May 08, 2017</p>	<p>All work is complete. The Clearwell has been disinfected and is back in-service. After project deletions\additions, the final total construction cost is approximately \$1.1 million.</p>

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<p>DVWTP 4.5 MG Clearwell Interior Recoating Project</p>	<p>The original interior coating, completed in 1989, has exceeded its useful life. The tank exterior recoating was completed in 2009. The interior coating system needs to be replaced to provide better corrosion protection of the steel to prolong the useful life of the clearwell.</p> <p>The project as proposed in the CIP includes removal and replacement of the interior coating and impressed current cathodic protection system. Based on experience during the 3 MG Clearwell roof replacement project, the scope for this project was modified to also include replacement of the 36-inch inlet and outlet valves and drain valves.</p>	<p>Total Estimated Cost = \$2,700,000</p> <p>Total Approved Budget - \$2,700,000</p> <p>Spent = 5%</p> <p>Project Complete = 5%</p>	<p>Design – July 2017</p> <p>Construction - April 2018</p> <p>Closeout May 2018</p>	<p>Staff completed the bid documents and advertised for bids in July 2017. Four bids were received ranging from approximately \$1.17M to \$2.98M. The low bid was received from an established contractor in both tank repairs and tank coating application.</p> <p>Contract Award anticipated for the 8/16/17 Board Meeting, along with award of Coating Inspection services by Bay Area Coating Consultants (BACC). BACC was selected as part of a Request for Proposals process for tank and coating inspection services. Construction is expected to start in October.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
<p>Hopyard Well 6 and Stoneridge Well Sodium Hypochlorite (NaOCI) Storage Tank Replacement Project</p>	<p>Per AMP, the existing NaOCI storage tanks at the two well facilities are beyond their useful life and need to be replaced. Work also includes piping and pump replacements, secondary containment structure improvements and coating.</p>	<p>Total Estimated Cost = \$1,100,000 Total Approved Budget - \$1,100,000 Spent = 65% Project Complete = 65%</p>	<p>Planning – Completed Design – Completed (September 2016) Construction – Hopyard 6 Well- Completed (May 2017) Construction Stoneridge Well- March 2018 Construction phasing is to have the wells operational in the late spring and summer to help meet water demands. Closeout – June 2018</p>	<p>A Contract was awarded to Conco-West, Inc., for \$537,000 on October 19, 2016 for combined Hopyard Well 6 and Stoneridge Well. <u>Hopyard Well 6</u> - In Service. Change orders to date total approximately \$27,000. <u>Stoneridge Well</u> - Construction scheduled to start during Fall 2017. Major equipment has already been procured.</p>
<p>Hopyard Pipeline Repair at Arroyo Mocho</p>	<p>A water leak in the distribution system was detected by operations staff and located in a section of the Hopyard Pipeline at the Arroyo Mocho near a blowoff assembly, which may also be the cause of the leak. This project scope includes procurement of necessary permits, determining the exact location of the leak and making necessary repairs.</p>	<p>Total Estimated Cost – \$350,000 Total Approved Budget – \$350,000 Spent = 85% Project Complete = 90%</p>	<p>Design – March 2017 Permitting – May 2017 Construction – August 2017</p>	<p>The source of the leak was found to be a crack at a butt strap connecting the original 1953 pipeline to a realigned 1966 pipeline. Corrosion and condition assessments by independent consultants verified the probable cause of failure as a buckling of the 14-gage steel shell followed by corrosive activity at the crack, not systematic corrosion of the pipeline. When a Hopyard pipeline isolation valve failed during an initial repair in June, an additional scope item of installing a new line valve (with appurtenances) became necessary and has caused a project completion delay to early August.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
<p>Mochó Groundwater Demineralization Plant (MGDP) Concentrate Pipeline Inspection and Cleaning</p>	<p>This project consists of the inspection and cleaning of the concentrate discharge line due to mineral build-up.</p> <p>After inspection of the pipe, Carollo Engineers provided other approaches such as batch cleaning operations using acid to remove the buildup. The cost of such an operation is on the order of \$700,000 to \$1,000,000 for a one time cleaning setup. It was determined that flushing of the concentrate pipeline with distribution water during MGDP shutdowns has the potential to mitigate further salt build up and eliminate or delay the need for cleaning. Staff will reassess the need for such a batch cleaning option over the next few years after reviewing effectiveness of the flushing operation.</p>	<p>Total Estimated Cost = \$520,000</p> <p>Total Approved Budget – \$520,000</p> <p>Spent = 41%</p> <p>Project Complete = 99%</p>	<p>Planning – Completed February 2016</p> <p>Inspection- Completed April, 2016</p> <p>Design– December 2016</p> <p>Construction of Distribution Flush Line - June 2017</p>	<p>A new connection for flushing the concentrate line with distribution system water has been designed. The connection will enable Zone 7 to flush the concentrate line with distribution system water instead of concentrate water during MGDP shutdowns to alleviate additional mineral build-up. Construction cost for the distribution system flush line was around \$80,000. Installation was completed by Zone 7's maintenance contractor, Monterey Mechanical (MM), in June.</p> <p>Project is complete. Zone 7 engineering and O&M staff are finalizing the standard operating procedure for the flush line.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
<p>Mocho Well 1 Sanding Investigation & Repair Project (Previously Mocho Well 2 Rehabilitation Project)</p>	<p>Per the AMP, this well is scheduled for maintenance. Work includes removal and assessment of the well pump, and casing maintenance activities.</p> <p>The project included pump replacement, brushing and bailing the casing, installation of 10-foot long casing liner to a section of blank casing above the screens for reinforcement and covering a possible crack/hole in the casing.</p>	<p>Total Estimated Cost = \$280,000</p> <p>Total Approved Budget - \$280,000</p> <p>Spent = 90%</p> <p>Project Complete = 100%</p>	<p>Planning – November 2015</p> <p>Design – September 2016</p> <p>Construction – Completed (April 2017)</p> <p>Closeout - Completed (May, 2017)</p>	<p>The construction is complete and the well is operational.</p>
<p>Mocho Well 2 Repair Project</p>	<p>Per the AMP, this well is scheduled for maintenance. Work includes removal and replacement of the well pump, and replacement of the portion of the discharge line that has a small leak in which the cumulative effects could potentially undermine the well building.</p>	<p>Total Estimated Cost = \$400,000</p> <p>Total Approved Budget - \$400,000</p> <p>Spent = 1%</p> <p>Project Complete = 1%</p>	<p>Planning – August 2017</p> <p>Design – October 2017</p> <p>Construction – April 2018</p> <p>Closeout - May 2018</p>	<p>Zone 7 engineering and O&M staff are collaborating on discharge line repair. Design is expected to begin in late August.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
DWWTP Ozonation Project	<p>This project combines the following current and future CIP projects:</p> <ul style="list-style-type: none"> DWWTP Ozonation which is to design & construction ozone treatment facilities including contactor, ozone generation and feed systems, liquid oxygen storage and feed systems, yard piping upgrades, electrical and instrumentation and controls and other ancillary work. Carbon Dioxide Project which includes carbon dioxide storage and feed systems for pH suppression and stabilization Filter Rehabilitation Phase 1 & 2 (filters 3-5, 6-8) which includes removal and replacement of filter media, coating of filter walls/floors, installation of new filter under drains and addition of air scour for backwashing. Main Plant Generator Project which includes removal and replacement of the existing (Continued in next column) 	<p>main plant generator with a larger unit to cover the additional electrical loads from the new ozone process.</p> <ul style="list-style-type: none"> Funding for the construction phase of Ozone and Filter rehab components of the project is anticipated to be to be debt financed. <p>Total Estimated Project Cost = \$38 to 40 million (design & construction)</p> <p>Planning & design budget – \$3.4 million</p> <p>Spent = 60% of Total planning & design budget</p> <p>Design Complete = 60%</p>	<p>Planning – Summer 2016</p> <p>Design – December 2017</p> <p>Construction – Ozonation System - substantial completion - Fall 2019 and Filter Rehab February 2020 (all construction contingent upon debt financing)</p> <p>Closeout – Spring 2020</p>	<p>60% design has been submitted for Zone 7 review. The 95% design submittal is scheduled for end of September 2017. Based on 60% construction sequence schedule review, it has been determined that it will be prudent to perform Ozonation system testing with existing filter media and then perform the filter rehab work from October 2019 to February 2020 after Ozonation system construction is complete.</p> <p>Design Engineer’s total project cost estimated to be based on 60% design documents, escalated to mid-point of construction and considering current construction bidding environment is approximately \$4-6M higher than noted originally noted in the CIP. The increase in cost estimate is mainly due to the improving economic climate. The application for SRF funding will reflect this increase in probable cost.</p> <p>The Covello Group, Inc., was selected through an RFP Process to provide construction management services for both DWWTP Ozonation and this project. They will also be reviewing the design and associated schedule and costs as part of their constructability/biddability review.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
<p>Fund 120 & 130 Split Projects</p> <p>PPWTP Upgrades and Ozonation Project</p>	<p>This project combines the following current and future CIP projects:</p> <ul style="list-style-type: none"> Additional Treated Water 5 MG Storage to construct a new clearwell at PPWTP to provide operational flexibility and improve reliability of PPWTP production (PPWTP New Clearwell (40% Fund 120, 60% Fund 130) PPWTP Expansion/New Media Filters to construct new 12 MGD dual media filters to replace UF demonstration plant capacity and expand PPWTP production capacity to meet demand (100% Fund 130) PPWTP UF Clarifier Floor Rehabilitation to replace the damaged mortar layer and reduce the risk of delaying commissioning of the new filters (100% Fund 120) PPWTP Filter Pipe Replacement to replace the aging filter valves, pumps, piping, and backwash system of the existing filters (100% Fund 120) PPWTP Filter Rehabilitation to rehabilitate the existing filters with new media, underdrains, (continued in next column) 	<p>air scour, and concrete repair/coating to accommodate biological filtration (100% Fund 120)</p> <ul style="list-style-type: none"> PPWTP Carbon Dioxide Installation to provide pH control prior to ozonation (50% Fund 120, 50% Fund 130) PPWTP Ozonation to construct an ozone facility at PPWTP (50% Fund 120, 50% Fund 130); the construction phase cost share of Fund 120 is anticipated to be debt financed <p>Total Estimated Cost = \$60.66M (planning, design, and construction)</p> <p>Total planning & Design Budget = \$6.64M</p> <p>Spent = 13% of Total Planning and Design Budget</p> <p>Design Complete = 13%</p>	<p>Planning – May 2017</p> <p>Design – June 2018</p> <p>Construction – Fall 2021 (contingent upon financing)</p> <p>Closeout – Winter 2021</p>	<p>The total project cost estimate has been increased by approximately 15% from original estimate based on CDM Smith's revised cost estimate for DWWT Ozonation Project and considering current construction environment. CDM Smith will provide the preliminary opinion of probable construction cost at the 30% design submittal.</p> <p>The draft Basis of Design (10% design) has been submitted for Zone 7 review. Project schedule has slipped by approximately two months due to modifications to the ultimate plant layout and additional Basis of Design workshops with Operations, Maintenance, and Engineering staff. As efforts will be made to recover some time by the bid date, the overall project schedule is still scheduled for completion in Fall 2021. CDM Smith is preparing a revised project schedule, which will be coordinated with the DWWT Ozonation Project.</p> <p>The Covello Group, Inc., was selected through an RFP Process to provide construction management services for both DWWT Ozonation and this project. They will also be reviewing the design and associated schedule and costs as part of their constructability/biddability review.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
Fund 130 Projects Mocho Diversion Facility	<p>This project scope is to construct a diversion structure to divert Arroyo Mocho water to Lake H in the Chain of Lakes. As part of the reclamation requirements, Hansen Aggregates is to lead and fund the design and construction of the diversion structure.</p>	<p>Prior to June 30, 2013, \$373,000 was spent.</p> <p>July 2013 to June 2017 = \$91,000 was spent.</p> <p>Design is 100% complete and submitted for permitting.</p> <p>FY 2017/18 Budget for tracking of Hansen's Permitting activities = \$25,000</p>	<p>Permitting – Completion depends on US Army Corps review (Hansen)</p> <p>Final Design – Completion depends on US Army Corps review (Hansen)</p> <p>Construction – Completion depends on US Army Corps review</p> <p>Closeout – TBD</p>	<p>This project was initiated in around 2000 with Zone 7 taking over the lead on permitting, CEQA and design with some funding support from Hansen (then Kaiser). That design and permitting effort was unsuccessful in obtaining any permits. Approximately \$373,000 was spent on this effort.</p> <p>Under the current effort, Hansen Aggregates is the lead for design and construction, and Zone 7 staff provides review time and monitors progress.</p> <p>Permits for construction are moving slowly but progress has been made. Hanson has successfully secured the ACOE 404 permit and will be submitting the 401 application within the next month. The long-term issue is the future permit requirements for possible species and habitat issues related to the operation of the diversion facility after downstream fish passage obstructions such as the BART weir in Fremont are removed.</p>

Project	Scope	Project Cost and FY 17/18 Budget	Schedule – Target Dates for Completion	Current Status
Fund 200 & 210 Split Projects				
<p>Arroyo Mocho Medeiros-Granada Project – (Arroyo Mocho Floodplain and Riparian Forest Restoration Project at Medeiros Parkway was combined with Arroyo Mocho Granada-Murrieta Projects and has been renamed)</p>	<p>This project is to create flood detention areas in an environmentally sensitive way along the Arroyo Mocho at Medeiros Pkwy and to improve flood protection through the Granada-Murrieta reach. The project will also be constructed in compliance with LARPD’s Robertson Park Master Plan and the City of Livermore’s Plan for the Oak Grove Nature Reserve so as not to preclude plans for recreation trails in the area.</p>	<p>Total Estimated Cost = \$16.3 million Total Planning & Design Budget- \$2.74 million Spent = 15% of Total planning & design budget Design Complete = 20%</p>	<p>Planning – November 2016 Design – August 2018 Construction – October 2019 Closeout – November 2019</p>	<p>Stakeholder engagement meetings were held with the City of Livermore, Livermore-Pleasanton Fire Department, and LARPD in May and with the public in July on the Medeiros Parkway conceptual design. Kickoff of the Granada-Murrieta reach planning and design was held in May with the Flow West team and City of Livermore in attendance. Flow West has completed addition of the Granada-Murrieta reach to the previously completed Medeiros reach hydraulic model. Selection of a conceptual design for the Granada-Murrieta reach is anticipated in August. Prior capital project status report incorrectly listed the target date for completion of design as August 2017, the correct date is August 2018.</p>